

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Claim 1 (Currently Amended): An impact-resistant molding material, comprising:

poly(meth)acrylate, and

at least one silicone rubber graft copolymer comprising

from 0.05 to 95% by weight, based on the total weight of the copolymer, of a core a) comprising an organosilicon polymer which has the general formula $(R_2SiO_{2/2})_x(RSiO_{3/2})_y(SiO_{4/2})_z$ where $x =$ from 0 to 99.5 mol%, $y =$ from 0.5 to 100 mol%, $z =$ from 0 to 50 mol%, where R means identical or different alkyl or alkenyl radicals having from 1 to 6 carbon atoms, aryl radicals, or substituted hydrocarbon radicals,

from 0 to 94.5% by weight, based on the total weight of the copolymer, of a polydialkylsiloxane layer b), and

from 5 to 95% by weight, based on the total weight of the copolymer, of a shell c) comprising organic polymers, wherein the core a) encompasses vinyl groups prior to the grafting process, and the shell c) is obtained via free-radical polymerization of a mixture in which acrylic esters and methacrylates are present,

wherein the ratio by weight of acrylic ester to methacrylate in the mixture for preparing the shell c) is in the range from 50:50 to 1:99;

wherein at least 85% of all of the vinyl groups are in an outer shell of the silicone core, and

wherein the outer shell of the silicone core is formed by 40% of the radius, and the volume of the outer shell is represented the formula $V=4\pi/3*r^3-4\pi/3*(0.6*r)^3$.

Claim 2 (Previously Presented): The impact-resistant molding material as claimed in claim 1, wherein the ratio by weight of core a) and layer b) to the shell c) is in the range from 70:30 to 55:65.

Claim 3 (Canceled):

Claim 4 (Previously Presented): The impact-resistant molding material as claimed in claim 1, wherein the molding material comprises at least 55% by weight of poly(meth)acrylates, based on the total weight.

Claim 5 (Previously Presented): The impact-resistant molding material as claimed in claim 1, wherein the molding material comprises at least one acrylate-rubber impact modifier.

Claim 6 (Previously Presented): The impact-resistant molding material as claimed in claim 5, wherein the particle diameter of the acrylate-rubber impact modifier is in the range from 50 to 1000 nm.

Claim 7 (Previously Presented): The impact-resistant molding material as claimed in claim 1, further comprising at least one styrene-acrylo-nitrile polymer.

Claim 8 (Previously Presented): The impact-resistant molding material as claimed in claim 7, wherein the styrene-acrylonitrile polymer is obtained via polymerization of a mixture which comprises

from 70 to 92% by weight of styrene,
from 8 to 30% by weight of acrylonitrile, and

from 0 to 22% by weight of other comonomers, based in each case on the total weight of the monomers to be polymerized.

Claim 9 (Previously Presented): The impact-resistant molding material as claimed in claim 1, wherein the molding material comprises

- f1) from 20 to 95% by weight of (meth)acrylate polymers,
- f2) from 0 to 45% by weight of styrene-acrylonitrile polymers,
- f3) from 5 to 60% by weight of silicone rubber graft copolymers,
- f4) from 0 to 60% by weight of acrylate-rubber impact modifier, based in each case on the weight of components f1-f4, and conventional additives.

Claim 10 (Previously Presented): The impact-resistant molding material as claimed in claim 1, wherein the silicone rubber graft copolymers have a particle diameter in the range from 10 to 300 nm.

Claim 11 (Previously Presented): The impact-resistant molding material as claimed in claim 1, wherein the shell c) is obtained via polymerization of a mixture in which methyl methacrylate and acrylic ester having from 1 to 8 carbon atoms are present.

Claim 12 (Previously Presented): The impact-resistant molding material as claimed in claim 1, wherein the acrylic ester is selected from the group consisting of ethyl acrylate, butyl acrylate, and mixtures thereof.

Claim 13 (Previously Presented): The impact-resistant molding material as claimed in claim 1, wherein the content of vinyl groups in the core a) is in the range from 2 to 3 mol%, based on the weight of the core.

Claim 14 (Previously Presented): An impact-resistant molding obtained via extrusion or injection molding of a molding material as claimed in claim 1.

Claim 15 (Previously Presented): The impact-resistant molding as claimed in claim 14, wherein the molding has a Vicat softening point to ISO 306 (B50) of at least 85°C, a notched impact strength NIS (Izod 180/1eA, 1.8 MPa) to ISO 180 of at least 3.0 kJ/m² at -20°C and of at least 2.5 kJ/m² at -40°C, a modulus of elasticity to ISO 527-2 of at least 1500 MPa.

Claim 16 (Previously Presented): The impact-resistant molding as claimed in claim 14, wherein the molding is a mirror housing or a spoiler for a vehicle, or is a pipe, or a protective cover, or a component of a refrigerator.

Claim 17 (Previously Presented): The impact-resistant molding material as claimed in claim 1, wherein a content of vinyl groups in the core a) prior to grafting is in the range from 0.5 to 10 mol %, wherein the mol % represent the molar proportion of the vinyl-containing monomers which for the purposes of calculation have one vinyl group, in all of the monomeric organosilicon compounds used to prepare the core a).

Claim 18 (Previously Presented): The impact-resistant molding material as claimed in claim 1, wherein the vinyl groups have an inhomogeneous distribution in the silicone core,

the proportion in the outer region of the silicone core being higher than in the region of the center of gravity of the core.

Claim 19 (Canceled):

Claim 20 (Previously Presented): The impact-resistant molding material as claimed in claim 1, wherein said silicone rubber graft copolymer has a monomodal distribution with a polydispersity index of not more than 0.4.

Claim 21 (Currently Amended): An impact-resistant molding material, comprising:
poly(meth)acrylate, and
at least one silicone rubber graft copolymer comprising
from 0.05 to 95% by weight, based on the total weight of the copolymer, of a core a)
comprising an organosilicon polymer which has the general formula
 $(R_2SiO_{2/2})_x \cdot (RSiO_{3/2})_y \cdot (SiO_{4/2})_z$ where x = from 0 to 99.5 mol%, y = from 0.5 to 100 mol%, z
= from 0 to 50 mol%, where R means identical or different alkyl or alkenyl radicals having
from 1 to 6 carbon atoms, aryl radicals, or substituted hydrocarbon radicals,
from 0 to 94.5% by weight, based on the total weight of the copolymer, of a
polydialkylsiloxane layer b), and
from 5 to 95% by weight, based on the total weight of the copolymer, of a shell c)
comprising organic polymers, wherein the core a) encompasses vinyl groups prior to the
grafting process, and the shell c) is obtained via free-radical polymerization of a mixture in
which acrylic esters and methacrylates are present,
wherein the ratio by weight of acrylic ester to methacrylate in the mixture for
preparing the shell c) is in the range from 50:50 to 1:99;

wherein the impact-resistant molding material further comprises at least one styrene-acrylo-nitrile polymer;

wherein the styrene-acrylonitrile polymer is obtained via polymerization of a mixture which comprises

from 70 to 92% by weight of styrene,

from 8 to 30% by weight of acrylonitrile, and

from 0 to 22% by weight of other comonomers, based in each case on the total weight of the monomers to be polymerized;

wherein at least 85% of all of the vinyl groups are in an outer shell of the silicone core, and

wherein the outer shell of the silicone core is formed by 40% of the radius, and the volume of the outer shell is represented the formula $V=4\pi/3*r^3-4\pi/3*(0.6*r)^3$.